



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

647.7712

Job Sheet 171202



Part No: 647.7712

Job Qty: 10 ea

Part Name: Strut Tube



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/30/18

Job Tracking No:

Created By: Michelle Gagnon-Donovan

Due Date: 2/15/18

Type: Stock

Description:

Note: DWG REV A2 IPP REV:A NEW ISSUE 12-11-06 JLM VERIFIED BY:DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	10 Ea		2/14/18	0.00	0.00	Start Up Machining-1		JB 18.03.26
100	Hardinge	10 pcs		2/15/18	0.00	0.95	Hardinge		JB 18.03.26
110	QC	10 pcs		2/15/18	0.00	0.00	QC2 Machining-1		JB 18.03.26
120	QC	10 pcs		2/15/18	0.00	0.00	QC8 Machining-1		JB 18.03.26
130	Packaging	10 pcs		2/15/18	0.00	0.00	Packaging3-1		JB 18.03.26
140	QC21-SA	10 Ea		2/15/18	0.00	0.00	QC21		JB 18.03.26

Part Op 100 - Machine as per folio FB148 FOLIO REV: _____ Debur

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M4130NR0.375	4130 Steel Round Bar .375"	.5000 ft (.05 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	M4130NR0.375	1	28	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Strut Tube	0.580inches ± 0.030	0.610 0.550		
2	Strut Tube	0.375inches ± 0.010	0.385 0.365	Diameter	
3	Strut Tube	0.225inches + 0.005 - 0.001	0.230 0.224	Diameter	

Plex 1/31/18 9:56 AM Dart.Gagnon.Michelle



Dart Aerospace Ltd.
12710 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 692-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S054800



Part: 647.7712

Job No: 171202

Serial No/Batch: S054800

Revision:

Inspector:

Date: 03/26/18

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO. 05397

SHEET 1 OF 1

DWG NO. 647.7700

REV: A

PREPARED BY T. CROSS

DATE: 05/02/16

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: STRUT ASSY

APPROVED BY: ENGR

MFG

QC

EFF:

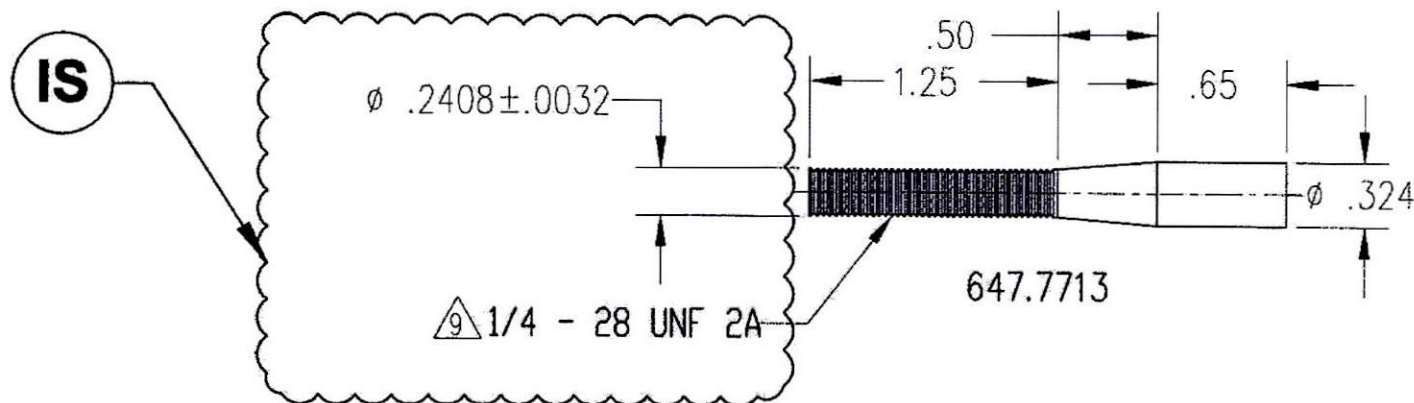
CURRENT ORDER

REASON: REVISED DIMENSION

ECR:
16-028

ACTION LIST:
1.

SHEET 2, ZONE D4 IS:



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 171202 *mf*

JAN 31 2018

DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOM

CHANGE CATEGORY
☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED
☐ YES ☒ NO



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

ENGINEERING CHANGE NOTICE NO.

05110

SHEET 1 OF 1

DWG NO. 647.7700

REV: A

PREPARED
BY

A. QUAN

DATE: 08/21/15

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: STRUT ASSY

APPROVED BY:

ENGR

MFG

QC

EFF.

CURRENT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON: REVISED FINISH CALLOUT AS PER ECR 15-209

SHEET 1, NOTES IS:

ACTION: UPDATE MO & WO

NOTES:

- 1 MATERIAL: 4130 STEEL PER AMS-T-6736, .50" OD, .083" WALL THK.
- 2 MATERIAL: 4130 STEEL PER AMS-T-6736, .375" OD, .075" WALL THK.
- 3 MATERIAL: 4130 STEEL PER AMS-T-6736, .324" OD.
- 4 FINISH: PRIME IAW MIL-P-2337J TYPE I CLASS N; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES
6. IDENTIFY IAW MPP-120.
- 7 WELD IAW MIL-STD-2219. TIG WELD WITH FILLER ROD
- 8 FINISH: CAD PLATE IAW QQ-P-416F CLASS I TYPE II
- 9 MASK THREAD PRIOR TO FINISH

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
DOCUMENTS EFFECTED: ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM					
CHANGE CATEGORY				DER REVIEW REQUIRED	
☐ MAJOR ☐ MINOR				☐ YES ☐ NO	

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NOTES:

1. MATERIAL: 4130 STEEL PER AMS-T-6736, .50" OD, .083" WALL THK.
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3. MATERIAL: 4130 STEEL PER AMS-T-6736, .324" OD.
4. FINISH: PRIME IAW MIL-P-2337J TYPE I CLASS N; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES
6. IDENTIFY IAW MPP-120.
7. WELD IAW MIL-STD-2219. TIG WELD WITH FILLER ROD
8. FINISH: CAD PLATE IAW MIL-C-5541 CLASS 1A
9. MASK THREAD PRIOR TO FINISH

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	LAST PROTOTYPE REVISION #12		N/C
2	HEAT RELEASE	12/02/08	P. BRAVO
3	INCORPORATED ECN 041	11/13/14	P. BRAVO

647.7701

647.7702

647.7703

UNINCORPORATED ECN(s)

05110, 05397,

23.75

647.7702

(1.850)

647.7701

11.60

(1.850)

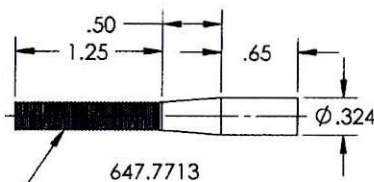
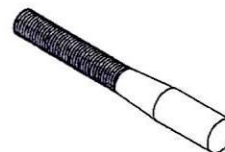
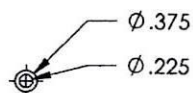
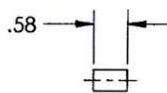
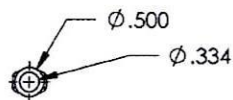
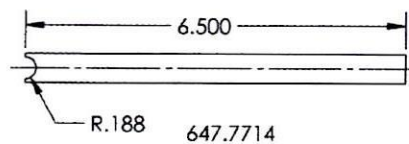
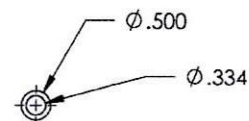
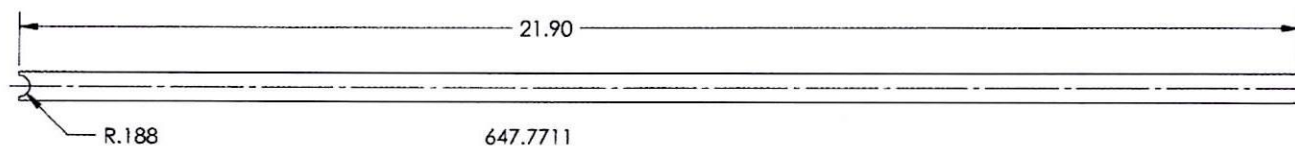
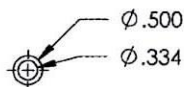
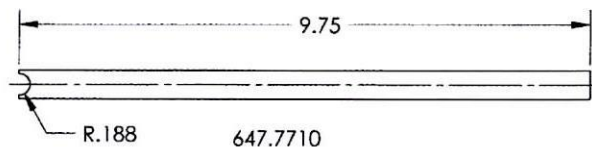
647.7703

8.35

(1.850)

1			5	647.7714	STRUT TUBE	△	
1	1	1	4	647.7713	STRUT THREAD	△	△
1	1	1	3	647.7712	STRUT TUBE	△	
	1		2	647.7711	STRUT TUBE	△	
		1	1	647.7710	STRUT TUBE	△	
				647.7703	STRUT ASSY		△△
				647.7702	STRUT ASSY		△△
				647.7701	STRUT ASSY		△△
7703	7702	7701	FIND #	PART #	DESCRIPTION	MATL	SPEC.
QTY				PARTS LIST			
NEXT ASSY (S)				APICAL INDUSTRIES			
647.7300				2608 TEMPLE HEIGHTS DR.			
646.4000				OCEANSIDE, CA. 92056-3512 (760)724-5300			
				STRUT ASSY			
				SCALE: NONE			
				SHEET 1 OF 2			

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1/4 - 28 THREAD

ORIGINAL DATE: 11/03/00
 (A/C DA-12)
 DRAWN BY: J. JACKSON
 CHECKED BY: J. JACKSON
 DRAWING APPROVAL: P. BRAYO
 CONTRACT NO.

APICAL INDUSTRIES
 2608 TEMPLE HEIGHTS DR.
 OCEANSIDE, CA. 92056-3512 (760)724-5300

STRUT ASSY
 SEE: (A/C CODE) D7M26 DWG. NO. 647.7700 REV. A
 SCALE: NONE SHEET 2 OF 2